

REMARKS

This is a full and timely response to the final Office Action mailed March 11, 2004. Upon entry of the attached amendments, claims 1-7, 9-19, 21-35, and 37-47 are pending in the application. Claims 8, 20, and 36 have been canceled without prejudice, waiver, or disclaimer. Claims 1, 6, 9, 11, 12, 14-18, 21, 23, 25, 26, 31, and 37 have been amended. The subject matter of the amended claims is supported in the schematics, plots, and flow diagrams, of at least FIGs. 6-15 and the related detailed description. Consequently, Applicant submits no new matter is added to the present application.

The foregoing amendments render all claim rejections moot and place the present application in condition for allowance. Accordingly, reconsideration and allowance of the application and presently pending claims 1-7, 9-19, 21-35, and 37-47 are respectfully requested.

I. Allowable Subject Matter - Claims 8, 20, 25, 28, 36 and 37

Applicant thanks the Examiner for indicating that the subject matter in dependent claims 8, 20, 25, 28, 36 and 37 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has amended independent claims 1, 14, 26, and 31 to include the subject matter of original claims 8, 20, 28, and 36 indicated as allowable in the Office Action mailed March 11, 2004. Accordingly, Applicant submits that presently pending claims 1-7, 9-19, 21-35, and 37-47 are allowable over the cited references.

II. Claim Rejections under 35 U.S.C. §103(a) - Claims 1-7, 11-19, 23, 24, 26, 27, 29-35, and 38-47

A. Statement of the Rejection

The Office Action indicates that claims 1-7, 11-19, 23, 24, 26, 27, 29-35, and 38-47 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent RE35423 to Adams *et al.*, hereafter *Adams*, in view of U.S. Patent No. 6,580,501 to Cannon, hereafter *Cannon* and U.S. Patent 5,780,866 to Yamamura, hereafter *Yamamura*.

B. Discussion of the Rejection

1. Claims 1-7, 11-13, 38-41, and 46

Applicant respectfully submits that the proposed combination of references fails to disclose, teach, or suggest each element in claims 1-7, 11-19, 23, 24, 26, 27, 29-35, and 38-47.

In order for a claim to be properly rejected under 35 U.S.C. §103, the combined teachings of the prior art references must suggest all features of the claimed invention to one of ordinary skill in the art. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q.2d 871, 881 (C.C.P.A. 1981). The proposed combination fails to suggest all features of the claimed invention.

Applicant's independent claim 1 is exemplary. Claim 1 is directed to a method for adapting test thresholds and includes "analyzing recorded measurements of a set of neighbor solder joints to calculate a range of acceptable measurements ... wherein analyzing is responsive to a best fit polynomial equation using the recorded measurements." *Adams, Cannon, and Yamamura* do not disclose, teach, or suggest at least this step of method claim 1. Accordingly, claim 1 is allowable and the rejection of claim 1 should be withdrawn.

Because independent claim 1 is allowable, dependent claims 2-7, 11-13, 38-41, and 46, which depend directly or indirectly from allowable claim 1, are also allowable. See *In re Fine*, 837, F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Accordingly, Applicant respectfully requests that the rejection of claims 1-7, 11-13, 38-41, and 46 be withdrawn.

2. Claims 14-19, 23-25, and 42-45

Applicant's independent claim 14 is also exemplary. Claim 14 is directed to a method for method for identifying solder joint defects that includes "analyzing the measurement associated with each of a set of neighboring solder joints to calculate an expected value for the measurement associated with each of the solder joints ... wherein analyzing is responsive to a best fit polynomial equation using the recorded measurements." *Adams, Cannon, and Yamamura* do not disclose, teach, or suggest at least this step of method claim 14. Accordingly, claim 14 is allowable and the rejection of claim 14 should be withdrawn.

Because independent claim 14 is allowable, dependent claims 15-19, 23-25, and 42-45, which depend directly or indirectly from allowable claim 14, are also allowable. *See In re Fine supra*. Accordingly, Applicant respectfully requests that the rejection of claims 14-19, 21-25, and 42-45 be withdrawn.

3. Claims 26, 27, 29, and 30

Applicant's independent claim 26 is directed to a solder-joint inspection system and includes a "means for computing an expected value for the measured characteristic for each of the plurality of solder joints ... wherein computing an expected value is responsive to a best fit polynomial equation using the measurements." *Adams, Cannon, and Yamamura* do not disclose, teach, or suggest at least this element of system claim 26. Accordingly, claim 26 is allowable and the rejection of claim 26 should be withdrawn.

Because independent claim 26 is allowable, dependent claims 27, 29, and 30, which depend directly or indirectly from allowable claim 26, are also allowable. *See In re Fine supra*. Accordingly, Applicant respectfully requests that the rejection of claims 26, 27, 29, and 30 be withdrawn.

4. Claims 31-35, and 47

Applicant's independent claim 31 is directed to a solder-joint defect analysis detection program stored on a computer-readable medium. The defect analysis detection program includes "logic configured to identify error value outliers using a box plot analysis." *Adams, Cannon, and Yamamura* do not disclose, teach, or suggest at least this element of computer-readable medium claim 31. Accordingly, claim 31 is allowable and the rejection of claim 31 should be withdrawn.

Because independent claim 31 is allowable, dependent claims 32-35, and 47, which depend directly or indirectly from allowable claim 31, are also allowable. *See In re Fine supra*. Accordingly, Applicant respectfully requests that the rejection of claims 31-35, and 47 be withdrawn.

III. Claim Rejections under 35 U.S.C. §103(a) - Claims 9, 10, 21, and 22

A. Statement of the Rejection

Claims 9, 10, 21, and 22 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over *Adams* in view of *Cannon* and *Yamamura* in further view of U.S. patent No. 4,792,683 to Chang *et al.*, hereafter *Chang*.

B. Discussion of the Rejection

Applicant submits that the proposed combination of references fails to disclose, teach, or suggest each element in claims 9, 10, 21, and 22.

1. Claims 9 and 10

Applicant's independent claim 1 includes "analyzing recorded measurements of a set of neighbor solder joints to calculate a range of acceptable measurements ... wherein analyzing is responsive to a best fit polynomial equation using the recorded measurements." *Adams*, *Cannon*, *Yamamura* and *Chang* do not disclose, teach, or suggest at least this step of method claim 1. Accordingly, dependent claims 9 and 10, which depend directly or indirectly from allowable claim 1, are also allowable. *See In re Fine, supra*. Accordingly, Applicant respectfully requests that the rejection of claims 9 and 10 be withdrawn.

2. Claims 21 and 22


Applicant's independent claim 14 includes "analyzing the measurement associated with each of a set of neighboring solder joints to calculate an expected value for the measurement associated with each of the solder joints ... wherein analyzing is responsive to a best fit polynomial equation using the recorded measurements." *Adams*, *Cannon*, *Yamamura* and *Chang* do not disclose, teach, or suggest at least this step of method claim 14. Accordingly, dependent claims 21 and 22, which depend directly or indirectly from allowable claim 14, are also allowable. *See In re Fine, supra*. Accordingly, Applicant respectfully requests that the rejection of claims 21 and 22 be withdrawn.

CONCLUSION

In summary, Applicant respectfully submits that presently pending claims 1-7, 9-19, 21-35, and 37-47 are allowable and the present application is in condition for allowance. Accordingly, a Notice of Allowance is respectfully solicited. Should the Examiner have any comments regarding the Applicant's response or intends to dispose of this matter in a manner other than a Notice of Allowance, Applicant requests that the Examiner telephone Applicant's undersigned attorney.

Respectfully submitted,

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